BOTANY OF SOUTH-WESTERN NEW SOUTH WALES.

By Fred. Turner, F.L.S., F.R.H.S., etc.

Introduction.

In the early history of the settlement of Australia the south-western portion of New South Wales was the theatre of many heroic struggles and trials of intrepid explorers such as Oxley, Evans, Cunningham, Sturt, Mitchell, Hume and Hovell, who discovered for the world that rich and fertile section of country now principally devoted to pastoral and agricultural pursuits. In the published accounts of their travels there are references to some of the most interesting plants growing there. I have always felt I was on classic ground when botanising in country traversed by those early explorers. I have seen the tree, *Eucalyptus rostrata*, Schlecht., under which Hume and Hovell are said to have camped in 1824.

Although it is not a century since that part of the State was a *terra incognita* to the civilised world, millions of sheep and thousands of horses and cattle are now being fattened on the indigenous grasses and herbage where the kangaroo and wallaby were the principal herbivora before the advent of the white man. Hundreds of thousands of acres have been brought under cultivation, and in ordinary seasons millions of bushels of excellent wheat are produced, and many other commercial crops are successfully grown.

This paper refers to the indigenous and acclimatised vegetation found between the parallel 33° South and the Murray or Hume River (the boundary of New South Wales and Victoria) and the meridians 141° to 147° East. The physical features of this region consist of gently undulating country, sand hills, mountain ranges, isolated hills, none of which, however, attain great

altitude, and nearly level plains, the last-named forming by far the greater portion of this area. Some of these plains consist of black soil, others of red loam, while considerable tracts are of a sandy nature. Much of the land bordering the rivers and creeks is rich alluvial deposits. Those are the principal soils of the South-West, but there are many others of an intermediate character. The surface of some of the ranges and hills is partly composed of rock or loose stones, whilst that of others is even and clothed with grass and herbage from base to summit. Some are called "bald hills" because they are bare of trees, but on a number arboreal and shrubby vegetation is growing. There are immense, treeless plains, separated here and there by large belts of timber; and considerable areas of open forest, scrub, pine, and mallee country. On the plains, when the atmospheric conditions were favourable, I have often seen a mirage of beautiful trees and lakes of clear water, and the effect is very remarkable, especially to one standing on sun-baked earth almost destitute of herbage.

Climate.

Temperature at Hay.

Mean temperature	63·4° F.
Mean Summer temperature	75·5°
Mean Winter temperature	50·6°
Highest temperature (shade)	117·3°
Lowest temperature (shade)	21·1°

The temperature will range from a few degrees higher in the extreme west to a few degrees lower in the extreme east, but those mentioned will give a good idea of the climate of South-Western New South Wales.

Rainfall.

The average annual rainfall at Hay is 14½ inches, but it ranges from 12 inches at Wentworth to 19¾ inches in the extreme east.

Water.

The South-West is naturally rather well watered by parts of the following rivers and their tributaries—Darling, Lachlan,

Murrumbidgee, Murray or Hume, Edward and Wakool. There are also several lakes, of which the following are the principal:—Cudgellico and Urana in the east; Pitarpunga, Yanga, Moornanyah, Yartla, Popilta and Victoria in the west. In propitious seasons the deep depressions and billabongs generally contain great quantities of water. Considerable enterprise has been shown by pastoralists, who have made many dams and tanks for the conservation of water. The Government also has done a considerable amount of good work in testing the western portion of this region for artesian supplies of water, and a number of wells have been sunk into the tertiary beds, but those I saw did not yield much water.

The Flora.

In the early part of 1875 I made my first collection of plants in the South-Western portion of New South Wales whilst on my first visit to Albury. But it is only during the last twenty-one years that I have many times traversed this region, systematically collecting the flora and writing more than fifty special reports on the economic value of the vegetation growing over different parts of this area. In addition, I have figured and described, as to their economic value, many of the useful plants of this region under instructions from the Government of New South Wales. In very many respects the flora differs from that found in the Darling country,* though there are a great number of plants common to both these sections. Speaking generally, the vegetation might be described as intermediate in character between that found north of the parallel 33° and that growing in the north-western portion of the adjoining State of Victoria. Near the rivers and most of the water-courses, the arboreal vegetation attains larger dimensions, much of the Mallee grows taller, the shrubby growth and herbaceous plants generally having a less rigid habit and more luxuriant foliage, whilst the flora of the plains generally grows more densely and consists of a greater

* These Proceedings, 1903, p. 406.

number and variety of dwarf plants to a given area than in the Darling country. The Darling country, as defined in my paper on the botany of that portion of the State, has an area of about 96,400 square miles, whilst the south-west, as defined by this paper, has only an area of about 57,360 square miles. The latter is about seven-twelfths the size of the former and is 24·86 per cent. richer in indigenous species. Those circumstances may be attributed to the fact that the average rainfall is slightly more, that there is a fairly good natural water system, that the average temperature is lower, and that there is less aridity than in the country north of the parallel 33°. There is another feature of the south-western flora which I have observed and is worth recording, namely, that on considerable areas of the plains in widely separated districts such *Compositæ* as *Helichrysum apiculatum*, DC., and *Helipterum floribundum*, DC., formed about sixty per cent. of the vegetation, and the same applies to certain *Cruciferæ*, especially species of the genera *Blennodia* and *Lepidium*, also to several *Chenopodiaceæ* as *Atriplex nummularia*, Lindl., *Kochia aphylla*, R.Br., *K. pyramidata*, Benth., and *K. sedifolia*, F.v.M. (the last-named is always an indication of dry country), and to *Anguillaria dioica*, R.Br., amongst *Liliaceæ*, and to *Xerotes leucocephala*, R.Br., amongst *Juncaceæ*. On swampy country and on land subject to periodical inundation such plants as *Glyceria ramigera*, F.v.M., "Cane Grass"; *Leptochloa subdigitata*, Trin., "Cane Grass"; *Mentha australis*, R.Br., "Native Mint"; *Marsilea drummondii*, A.Br., "Nardoo"; and *Muhlenbeckia cunninghamii*, F.v.M., "Lignum Scrub" or "Sturt's Leafless Bramble," often form dense growths almost excluding other vegetation. Such annuals as *Erodium cygnorum*, Nees, "Crow-foot"; *Portulaca oleracea*, Linn., "Purslane"; and *Tetragonia expansa*, Murr., "Warrigal Cabbage," are often the predominant plants on large areas at certain seasons of the year. And a similar remark applies to that South African Composite, *Cryptostemma calendulaceum*, R.Br. Quite a number of introduced species (principally from Europe) have become acclimatised in different districts, but mostly in the eastern portion.

Ranunculaceæ are not largely represented, but the Order includes a few interesting species, such as *Clematis microphylla*, DC., which is found in many parts and in spring time often displays a wealth of white flowers. That widely distributed and curious plant, *Myosurus minimus*, Linn., may be collected on the margins of many of the rivers and lakes. The genus *Ranunculus* furnishes four species—one, *R. muricatus*, Linn., is an introduction and a suspected poison plant. It is fairly common in the extreme eastern portion. The poppy family (*Papaveraceæ*) has only one indigenous species, *Papaver horridum*, DC., but four exotics have become established in various localities. *Cruciferæ* are common over a great part of this region, and on some of the plains are a conspicuous feature in early spring. Although the prevailing hue of the flowers is yellow, it varies in intensity of colouring, and there are several species which have white, purple, pink and lilac blooms. The genus *Capparis* includes two species only and neither of these is common, but that curious, leafless, allied plant, *Apophyllum anomalum*, F.v.M., occurs frequently on some of the scrubby country in the western portion. One of the Australian Violets, *Viola betonicæfolia*, Sm., is found on some of the shady river banks. Its rather large, violet-coloured flowers are produced in great profusion in early summer, but they have no perfume. This species produces many apetalous or imperfect flowers usually arranged on very short scapes. Two species of *Ionidium* grow in many districts, but nowhere very plentifully. Their singular, mostly blue, flowers, of which the lowest petal is more largely developed than the others, often attract attention. There is a white-flowering variety of *I. floribundum*, Walp., but it is a rare plant. *Pittosporeæ* comprise four genera and the same number of species. With the exception of *Pittosporum phillyræoides*, DC., they are found mostly in the eastern portion. *Cheiranthera linearis*, A. Cunn., is the most beautiful flowering plant of this Order, but it may be considered rare in this part of the State. It is a low-growing undershrub, with showy blue flowers, which are from one inch to nearly two inches in diameter. The Australian species of *Polygaleæ*, or milk-wort family, are

neither numerous nor important, and of the three genera only one, *Comesperma*, is endemic. In the South-West there are three species of this genus, of which *C. scoparium*, Steetz, is the most singular. It is a dwarf, broom-like, leafless shrub, and on its smaller branches blue flowers appear usually in spring, but sometimes in autumn. It is generally found in sandy country or on stony rises. The Order *Frankeniaceæ* consists of only one genus, *Frankenia*, and of the seven species found in Western Australia only one, *F. pauciflora*, DC., extends to New South Wales. It is an interesting plant to the botanist from the fact that it is allied to *Dianthus* and cognate genera. *Malvaceæ* are fairly well distributed, and at certain seasons of the year produce a profusion of flowers of various colours. Some species of the genera *Howittia*, *Abutilon*, and *Hibiscus* are well worth the attention of horticulturists, and so is *Gossypium sturtii*, F.v.M., the "native cotton" or, as it is sometimes called, "Sturt's desert rose." Several exotic species, principally of the genus *Malva*, have become acclimatised and now are apparently wild.

Linum marginale, A. Cunn., is the only indigenous species of the flax family (*Lineæ*). It is a slender-growing plant, attaining under favourable conditions, a height of four feet. It produces a loose corymb of charming blue flowers, and the seeds are mucilaginous, but are rarely used for any purpose. From its stems the Aborigines make a fibre which is of considerable strength, and is employed for several purposes. The introduced species, *Linum gallicum*, Linn., has small, yellow flowers. The Order *Zygophylleæ*, or "bean caper," is represented by several species, but, with one exception, they are dwarf or prostrate-growing plants, having opposite leaves and yellow or white flowers. Certain of them are considered vermifuges. In propitious seasons the "caltrops," *Tribulus terrestris*, Linn., spreads rapidly, and its prickly fruits often prove troublesome to stock. Amongst the prettiest flowering *Rutaceous* plants are *Eriostemon myoporoides*, DC., and *E. difformis*, A. Cunn., which occur in various districts, but principally near water-courses. The soft, acid fruits of the "native cumquat" (*Atalantia glauca*, Hook.), are made

into preserves. *Sapindaceæ* include some interesting trees and shrubs. The genus *Dodonæa* has eight species which have polygamous or unisexual, often diœcious flowers and capsules, mostly furnished with dorsal wings. The ripe fruits are red, brown or green, and are called "hops" by the settlers in the interior. A shrub in fruit is an ornamental object. Many of the species are fairly common on sand-hills and on country of a light loamy nature.

Leguminosæ are numerous as regards species and fairly well distributed over this region; they include trees, shrubs, herbaceous and annual plants, many of which are of a highly ornamental character. Some, when in bloom, are amongst the most charming plants of the interior. Many of the arboreal species furnish timber for industrial purposes, and the leaves of certain of them provide feed for stock during adverse seasons. *Acacia* is more largely represented by species than any other genus of this Order. No less than forty-two distinct species, besides varieties, are found in varying proportions over this area. Some of the shrubby kinds grow very densely and often form great thickets, which are difficult to penetrate either on foot or on horseback. The genera that rank next to *Acacia* in regard to the number of species are *Swainsona*, *Cassia*, and *Pultenæa*. The first has eleven, the second nine, and the third eight species. The suspected poison plants of this order belong to the following genera:—*Isotropis*, *Goodia*, *Crotalaria*, *Lotus*, *Indigofera*, and *Swainsona*. Many exotic *Leguminous* plants have become established, and now are apparently wild in different districts. Those species of *Medicago* which have prickly legumes are often troublesome to the sheep-owner, as the fruits get matted in the wool and, to a certain extent, cause a depreciation in the value of that staple product. Although many species of the Order *Haloragaceæ* are of little interest to any but the botanist, there are a few exceptions. On some of the sandy and gravelly places two species of *Loudonia*, with golden-yellow flowers, arranged in terminal corymbose panicles, often arrest attention, and species of *Myriophyllum* and *Ceratophyllum* well repay examination and study. These two

genera are aquatic plants and fairly common in some of the sluggish water-courses. The *Myrtaceæ* comprise both arboreal and shrubby growth, occurring in more or less profusion over nearly the whole of this region. The pretty, white-flowering shrub, *Calythrix tetragona*, Labill., is often seen, generally in sandy country. The lobes of the calyx are produced into fine awns, about one-quarter of an inch long, hence it is sometimes called "spider-bush." Several species of *Leptospermum* and *Melaleuca* grow near some of the water-courses, and when in bloom are a pretty sight amongst the surrounding, somewhat sombre vegetation. The genus *Angophora* is represented by one species, *A. intermedia*, DC., which grows into a fair-sized tree in some situations, but the principal arboreal vegetation is the *Eucalyptus*, of which the noblest member is *E. rostrata*, Schlecht. This tree grows abundantly on the banks of rivers, billabongs, and creeks, and on land subject to periodical inundation. All the water-courses can easily be defined miles away by this beautiful tree. The timber of this species and of some other western Eucalypts is of great economic value, being used for a variety of purposes where strength and durability are required. The principal Eucalypti forming the Mallee scrub are *E. gracilis*, F.v.M., *E. uncinata*, Turcz., *E. dumosa*, A. Cunn., *E. incrassata*, Labill., and *E. oleosa*, F.v.M., and to a less extent *E. paniculata*, Sm. From the thick roots of a few of these species (when cut into short lengths and placed in a vertical position) moderate quantities of fair drinking water can be obtained in the driest of seasons. The most graceful species of *Eucalyptus* in the interior is *E. pendula*, A. Cunn. It has a drooping habit, with rather long, narrow leaves and sometimes crimson-coloured flowers. The inflorescence of *E. behriana*, F.v.M., is often of the same colour, whilst that of *E. leucoxylon*, F.v.M., is frequently red. When in bloom these Eucalypti often make an effective display, forming a pleasing contrast to those species which produce white or cream-coloured flowers. *Umbelliferæ* are represented by six genera and thirteen species, which are fairly well distributed. Two species of *Trachymene*—*T. australis*, Benth., and *T. incisa*, Rudge,

popularly known as "Wild Parsnip"—are suspected of poisoning stock; whilst the species of *Apium* and *Daucus*, when partaken of by milch cows, are regarded as giving a "taint" to milk.

Loranthaceæ consist of seven species of *Loranthus*, found on different kinds of trees and shrubs, and these parasitical plants appear to be increasing to the injury of certain kinds of vegetation.* I have seen trees and shrubs absolutely killed by *Loranthus pendulus*, Sieb., one of the most vigorous-growing species of this genus. There is no doubt that the mistletoe bird, *Dicæum hirundinaceum*, Shaw, is largely responsible for the spread of these parasites. That bird eats the ripe fruits and voids or otherwise leaves the seeds on the branches of the trees, where they germinate and in due course develop into plants. At one time the Aborigines used to eat the ripe fruit of several species of *Loranthus*, and thus prevented many of the seeds being disseminated by birds and other agencies. *Compositæ* are abundant over the great part of this region, particularly from Mt. Elliott to considerably west of Oxley, and from Hillston to Pooncarie, where much of the plain country, in the early summer months and sometimes in autumn after rainfall, is often literally carpeted with many species of this family. When these plants are in bloom the effect is positively bewildering to the eye, and even a brief reference to the different species would occupy more pages of the Society's Proceedings than I should presume to ask for. I might refer, however, to one or two circumstances by way of illustrating the useful character of certain of these plants. On one very large pastoral holding in the Mossgiel district *Helipterum floribundum*, DC., was the principal feed of the sheep for four years, and the manager informed me that the animals thrived well on this plant. On the Murray the leaves and succulent stems of *Senecio magnificus*, F.v.M., are sometimes cooked and eaten as a vegetable. I have eaten the palatable fleshy roots of the "native Scorzonera," *Microseris forsteri*, Hook. f. Quite a number of exotic *Compositæ*, some of an undesirable character, have become

* These Proceedings, 1894, p. 557.

acclimatised and now are apparently wild in many districts. *Goodenovieæ* are represented by four genera and sixteen species, many of them being most interesting plants when in flower. The Australian "blue bell," *Wahlenbergia gracilis*, DC., of the *Campanulaceæ*, is a most variable plant, common in many parts, and in a few districts an albino and a semi-double flowered variety have been observed. There is also one species of *Isotoma*, *I. axillaris*, Lindl., of this family, of which there is a white variety, but it is rare. The south-western *Apocyneæ* and *Asclepiadeæ* are mostly climbers and twiners, but the species are neither numerous nor abundant. *Alstonia constricta*, R.Br., a small tree of the former family, yields a bark which has febrifuge properties. An infusion of the bark of this is often taken by those suffering from feverish symptoms, &c , and it is, therefore, known to the settlers in the interior as the "bitter" or "fever bark tree." It is widely distributed, but nowhere plentifully. *Gentianeæ* consist of only two genera and two species, which, however, are common in many districts. They are *Sebæa ovata*, R.Br., and *Erythræa australis*, R.Br., the former having yellow and the latter pink flowers. A bitter principle pervades all parts of these small, annual plants, and they are employed medicinally as rustic remedies in stomachic complaints, &c. *Borragineæ* include many interesting species, and they are widely distributed. A few are found near water, some on the plains, and others on higher land. One of the most charming plants of this Order is *Halgania strigosa*, Schlecht. Its intensely blue flowers, which are often borne in great profusion, are admired by every one who sees them. Certain species of *Scrophularineæ* are held in repute for their medicinal properties, but the greater number are pretty flowering plants included in the following genera:—*Mimulus*, *Morgania*, *Veronica*, and *Euphrasia*. Persons prospecting for gold regard the occurrence of *Veronica perfoliata*, R.Br., as an indication of auriferous country. The only member of the *Bignoniaceæ* is *Tecoma australis*, R.Br. This climbing plant is widely distributed, but nowhere plentiful. In some seasons it flowers very profusely, and then is a conspicuous object. *Myoporineæ*, either in a

shrubby or subarboreal state, occur mostly in the western portion, many of the species being admired for their singularly beautiful flowers. I have grown several of them in the eastern portion of the continent, and they succeeded admirably when planted in dry situations. I have also seen a few species successfully cultivated in some of the plant houses in Europe. Several species of the *Labiate* family are strongly scented, and some of them are widely distributed both on high and low land. *Prostanthera* is more largely represented by species than any other genus of the Order, and when these shrubs are in bloom they make a charming floral display, especially *P. nivea*, A. Cunn., whose flowers are rather large and mostly white. Notwithstanding the fact that the leaves of these plants are studded with resinous glands, sheep and rabbits eat them as well as those of the two species of *Teucrium*. Several exotic *Labiates* have established themselves, and some species now are apparently wild, especially in the eastern portion.

Codonocarpus cotinifolius, F.v.M., of the *Phytolaccaceæ*, is one of the most remarkable trees in the interior, and is known locally as the "horse-radish tree." Its curious flowers and fruits render it a very interesting object to the botanist. It is figured and described in my work on the indigenous "Forage Plants of Australia" (non grasses). *Gyrostemon cyclotheca*, Benth., is an allied species of shrubby habit with diœcious flowers. Both these species are usually found on low sand hills or on sandy country, but not plentifully. Amongst the most useful plants, from a pastoralist's point of view, are the numerous species of the saltbush family (*Chenopodiaceæ*), and they are widely distributed, but not nearly as plentifully as in former years. This Order comprises no less than twelve genera and sixty-one species, all the most important of which I have figured and described, as to their economic value, under the authority of the Government of New South Wales. Although the greater number of the plants of this Order are of a high economic value from a stock-owner's point of view, there are a few species, especially when in fruit, of an undesirable character. Stockmen call the ripe fruits

of the various species of *Anisacantha* "Bindyhies," and they are often a terror to those who camp out in the western country. Once these fruits with their adherent spines get into a blanket they can rarely be removed again, and should stock eat too freely of these plants when the fruits are near maturity, trouble is often caused to their salivary glands. *Anisacantha muricata*, Moq., when dry, makes the troublesome "roley poleys" on some of the plains. *Amarantaceæ* and *Polygonaceæ* are represented by a number of interesting plants, particularly the former Order. In the early summer months some places on the plains are quite gay with the curious flowers of several species of *Trichinium*. *Proteaceæ* consist of six genera and nineteen species, most of which are widely distributed. They are found on various soils, principally in sandy country, though a few species grow on the stronger classes of soil and on stony rises. The South-Western *Thymeleæ* consist of only one genus, *Pimelea*, but there are eleven species and one variety, and some of them are fairly plentiful. Several have a bad reputation amongst pastoralists, who regard them as stock-poisoners. *Euphorbiaceæ* occur in many districts, and consist principally of shrubs and herbs. Speaking generally, they may be recognised by the milky juice which pervades all parts of the plant, their unisexual flowers and tricoccous fruit. Many of the species have long been suspected of poisoning stock. Four species of *Casuarina* are found over a large area, and although they grow fairly plentifully in some places they do not form forests as do many other kinds of trees. *Santalaceæ* include several trees and shrubs of economic importance. Some of the species are popularly known in the interior as "Sandalwood," "Quandong," "Native Currant," and "Native Cherry." The young, leafless branches of *Choretrum glomeratum*, R.Br., possess an agreeable acidity, and they are sometimes chewed by stockmen and travellers desirous of assuaging their thirst.

Monocotyledoneæ are well represented both by genera and species. They consist of aquatic, epiphytal and terrestrial plants, the last, of course, largely predominating. *Hydrocharideæ* include three interesting species, of which *Ottelia ovalifolia*, J. C.

Rich., is the most showy flowering plant. It has submerged, tufted, radical leaves, ovate or oblong floating ones and rather large whitish flowers. It is fairly common in many of the fresh water lakes and lagoons. Two other allied plants, *Vallisneria spiralis*, Linn., and *Hydrilla verticillata*, Casp., are found in many of the water-courses.

With the exception of one epiphytal species, *Cymbidium canaliculatum*, R.Br., all the south-western *Orchideæ* are terrestrial plants which are fairly numerous, especially in the eastern portion. The most widely distributed species of this Order is *Pterostylis rufa*, R.Br. In one or other of its several forms it is found from the extreme east to the farthest settlement west, but nowhere plentifully. The tallest growing members of this family are the two species of *Prasophyllum*, but those kinds which produce the most showy flowers belong to the genera *Thelymitra*, *Diuris* and *Caladenia*. In September and October groups of these plants may often be seen in bloom, and although the flowers are small in comparison with those of the tropical exotic species, still they are a charming sight when growing amongst the vivid green spring herbage. The colour of the flowers ranges through all shades of blue, purple, yellow, pink, and white. There is considerable variation in regard to the height of the plants, and colour and size of the blooms of certain species of *Caladenia*. When bruised the leaves of *Glossodia major*, R.Br., emit a sweet perfume. I have found no indigenous *Irideæ*, but four exotic species of this Order have become acclimatised in a few districts. The two South African species of *Homeria* (*H. collina*, Sweet, and *H. aurantiaca*, Sweet) with orange-coloured flowers and commonly known as "Cape tulip," are suspected poison plants. *Amaryllideæ* have a few beautiful flowering species, usually found on sandy country. Several species of the lily family (*Liliaceæ*) occur in greater or less profusion almost all over this region. They include plants popularly known as "fringed violets" (*Thysanotus* spp.), "native onion" or "leek" (*Bulbine* spp.), "blind poison plant" (*Stypandra glauca*, R.Br.), and "Cockatoo plant" (*Anguillaria dioica*, R.Br.).

The last-named is an exceedingly variable and most interesting plant, generally dicœcious but often polygamous, with white flowers and prominently three-angled capsules containing small, globular seeds. *Juncaceæ* consist of three genera and ten species, and some of them are widely distributed. The dicœcious flowers of some species of *Xerotes* are sweetly scented and often perfume the air for a considerable distance. *Cyperaceæ* are found almost all over this section of the State, occurring on high and low land and in marshy situations. Several species are very ornamental when in flower, especially those of the genera *Cyperus* and *Fimbristylis*. A few species of this Order are eaten by stock, but, speaking generally, the feeding value of these plants is not considered to be very high, though they are of great importance in the economy of nature.

The indigenous *Gramineæ* are represented by forty-seven genera and one hundred and fifteen species besides varieties, of which all the more important ones have been figured and described, as to their economic value, by me under instructions from the Government of New South Wales. Many exotic species, some of which have become acclimatised, are found in more or less abundance over nearly the whole of this region. From a pastoralist's point of view, the indigenous grasses are the most important part of the vegetation of the South-West.

Acotyledoneæ, as far as vascular *Cryptogams* are concerned, and this Census does not take into account cellular *Cryptogams*, are not a conspicuous feature of the flora of the South-West, though they are more numerous, both in genera and species, than in the Darling country. On many of the still waters the two species of *Azolla* are very common, particularly *A. rubra*, R.Br. This floating plant completely covers some lagoons, and it goes by the name of "red jacket," on account of its prevailing colour. I have frequently taken water for drinking purposes from lagoons covered with this plant because it was invariably clear and very much cooler than that exposed to the fierce rays of the sun. There is no doubt that these species of *Azolla* considerably check the evaporation of water in summer time.

Marsilea drummondii, A.Br., grows abundantly on land in the western portion that is subject to periodical inundation, but the involucres are rarely now collected by the Blacks as an article of food. Of the fern family (Filices) *Cheilanthes tenuifolia*, Swartz, has the widest range, being found on high and low land, on various classes of soil and on stony rises. In some districts the "bracken" fern, *Pteris aquilina*, Linn., var. *esculenta*, is common, and I have been informed that the Aborigines, before they tasted the sweets of civilisation, used to cook and eat the underground stems of this fern. The other members of this family enumerated in the following pages are mostly found in the eastern portion and in some places fairly plentifully, with the exception of *Ophioglossum vulgatum*, Linn., which appears to be rare.

This is the first Census of the *Phanerogamia* and vascular *Cryptogamia* of South-Western New South Wales, and I hope it will be found useful to those who desire to study the flora of that portion of the State. Many plants not hitherto recorded from that region will be found in the following pages.

All the indigenous plants included in this Census that I did not know at sight I have worked out by the diagnosis given in Bentham's 'Flora Australiensis,' and I have followed the same classification and nomenclature as have been adopted in that valuable reference work.

The plants marked with an asterisk are exotic, but some of them have become acclimatised in the South-West.

The plants marked with a dagger have been figured and described, as to their economic value, by me.

In addition to those intrepid explorers already mentioned, several others, including Frazer, Eyre, Dallachy, Mueller and Beckler, have collected plants in the South-West, and their names will always be inseparably associated with the flora of New South Wales.

My thanks are due to a number of pastoralists and stockmen for forwarding me botanical specimens for identification during the last nineteen years.

The accompanying table shows the percentage of the indigenous *Phanerogamia* and the vascular *Cryptogamia* of the South-West compared with the similar flora of New South Wales.

New South Wales.	South-Western New South Wales.	Percentage.
Dicotyledoneæ.	*Dicotyledoneæ.*	
Genera ... 662	Genera ... 282	Genera ... 42·59
Species ... 2393	Species ... 727	Species ... 30·38
Monocotyledoneæ.	*Monocotyledoneæ.*	
Genera ... 212	Genera ... 89	Genera ... 41·98
Species ... 668	Species ... 212	Species ... 31·73
Acotyledoneæ.	*Acotyledoneæ.*	
Genera ... 40	Genera ... 8	Genera ... 20·00
Species ... 145	Species ... 10	Species ... 6·89
Total Genera 914	Total Genera 379	Genera ... 41·46
Total Species 3206	Total Species 949	Species ... 29·60

Class I. DICOTYLEDONS, Ray.

Subclass I. POLYPETALÆ.

Series I. Thalamiflorae.

Ranunculaceæ, B. de Juss.

Clematis microphylla, DC.

Myosurus minimus, Linn.

Ranunculus lappaceus, Sm.

rivularis, Banks et Sol.

parviflorus, Linn.

muricatus, Linn.*

Adonis autumnalis, Linn.*

Dilleniaceæ, Salis.

Hibbertia sericea, Benth.

stricta, R.Br., var. *canescens.*

Papaveraceæ, Juss.

Papaver horridum, DC.

hybridum, Linn.*

PAPAVERACEÆ.

Papaver argemone, Linn.*
rhœas, Linn.*
Argemone mexicana, Linn.†*

CRUCIFERÆ, B. de Juss.

Nasturtium palustre, DC.
Cardamine laciniata, F.v.M.
tenuifolia, Hook.
hirsuta, Linn.
Alyssum linifolium, Steph.
Sisymbrium officinale, Scop.*
Blennodia filifolia, Benth.†
trisecta, Benth.†
nasturtioides, Benth.†
eremigera, Benth.
cardaminoides, F.v.M.
curvipes, F.v.M.
brevipes, F.v.M.
lasiocarpa, F.v.M.†
canescens, R.Br.
cunninghamii, Benth.
Stenopetalum velutinum, F.v.M.
lineare, R.Br.
sphærocarpum, F.v.M.
Menkea australis, Lehm.
Capsella procumbens, Fries.
bursa-pastoris, Mœnch.†*
Senebiera didyma, Pers.*
Lepidium leptopetalum, F.v.M.
phlebopetalum, F.v.M.
monoplocoides, F.v.M.
papillosum, F.v.M.
ruderale, Linn.
Thlaspi cochlearinum, F.v.M.†
ochranthum, F.v.M.

FUMARIACEÆ, De Cand.
Fumaria officinalis, Linn.*
parviflora, Linn.*

RESEDACEÆ, DC.
Reseda luteola, Linn.*

CAPPARIDEÆ, Juss.
Capparis mitchelli, Lindl.
loranthifolia, Lindl.
Apophyllum anomalum, F.v.M.

VIOLARIEÆ, De Cand.
Viola betonicæfolia, Sm.
Ionidium floribundum, Walp., et var. *alba*.
filiforme, F.v.M.

PITTOSPOREÆ, R.Br.
Pittosporum phillyræoides, DC.†
Bursaria spinosa, Cav.
Billardiera scandens, Sm.
Cheiranthera linearis, A. Cunn.

POLYGALEÆ, Juss.
Comesperma scoparium, Steetz.
volubile, Labill., et var. *alba*.
ericinum, DC.

FRANKENIACEÆ, St. Hil.
Frankenia pauciflora, DC.

CARYOPHYLLEÆ, Labill.
Gypsophila tubulosa, Boiss.
perfoliata, Linn.*
Dianthus prolifer, Linn.*
Saponaria vaccaria, Linn.*
Silene gallica, Linn.*
Lychnis githago, Lam.*
cæli-rosa, Dur.*
Cerastium vulgatum, Linn.*
Stellaria pungens, Brongn.
glauca, With.

CARYOPHYLLEÆ.

Stellaria flaccida, Hook.
media, Linn.*
Spergularia rubra, Pers.
Polycarpon tetraphyllum, Linn. f.

PORTULACEÆ, Juss.

Portulaca oleracea, Linn.†
Calandrinia polyandra, Benth.
pusilla, Lindl.
volubilis, Benth.

ELATINEÆ, Cam.

Bergia ammannioides, Roth.

HYPERICINEÆ, St. Hil.

Hypericum gramineum, Forst.
japonicum, Thunb.
perforatum, Linn.†*

MALVACEÆ, Juss.

Lavatera plebeia, Sims.†
Malva rotundifolia, Linn.*
parviflora, Linn.*
sylvestris, Linn.*
verticillata, Linn.*
Modiola multifida, Mœnch.*
Malvastrum spicatum, A. Gray.†
Plagianthus spicatus, Benth.
microphyllus, F.v.M.
Sida corrugata, Lindl.
intricata, F.v.M.
petrophila, F.v.M.
rhombifolia, Linn.
Howittia trilocularis, F.v.M.
Abutilon otocarpum, F.v.M.
avicennæ, Gærtn.
oxycarpum, F.v.M.
fraseri, Hook.

MALVACEÆ.

Hibiscus trionum, Linn.
brachysiphonius, F.v.M.
krichauffianus, F.v.M.
sturtii, Hook.
Gossypium sturtii, F.v.M.†

STERCULIACEÆ, Vent.

Sterculia diversifolia, G. Don.†
Rulingia rugosa, Steetz.
Lasiopetalum behrii, F.v.M.
baueri, Steetz.

Series II. DISCIFLORÆ.

LINEÆ, DC.

Linum marginale, A. Cunn.
gallicum, Linn.*

ZYGOPHYLLEÆ, R.Br.

Tribulus terrestris, Linn.†
Nitraria schoberi, Linn.
Zygophyllum apiculatum, F.v.M.†
glaucescens, F.v.M.†
iodocarpum, F.v.M.†
billardieri, DC.
fruticulosum, DC.

GERANIACEÆ, Juss.

Geranium dissectum, Linn.†
Erodium cygnorum, Nees.†
cicutarium, L'Hér.*
moschatum, Willd.*
Pelargonium australe, Willd.
rodneyanum, Lindl.
Oxalis corniculata, Linn.

RUTACEÆ, Juss.

Zieria furfuracea, R.Br.
Boronia cœrulescens, F.v.M.
inornata, Turcz.

RUTACEÆ.

Eriostemon myoporoides, DC.
difformis, A. Cunn.
Phebalium pungens, Benth.
glandulosum, Hook.
Geijera parviflora, Lindl.†
Atalantia glauca, Hook.

MELIACEÆ, Juss.

Owenia acidula, F.v.M.
Flindersia maculosa, F.v.M.†

CELASTRINEÆ, R.Br.

Celastrus cunninghamii, F.v.M.

STACKHOUSIEÆ, R.Br.

Stackhousia monogyna, Labill.
muricata, Lindl.

RHAMNEÆ, Juss.

Ventilago viminalis, Hook.
Pomaderris racemosa, Hook.
Spyridium subochreatum, Reissek.
eriocephalum, Fenzl.
Stenanthemum leucophractum, Reissek.
Cryptandra amara, Sm.
tomentosa, Lindl.
propinqua, A. Cunn.

SAPINDACEÆ, Juss.

Atalaya hemiglauca, F.v.M.†
Heterodendron oleæfolium, Desf.†
Dodonæa viscosa, Linn.
attenuata, A. Cunn.†
cuneata, Rudge.
lobulata, F.v.M.†
bursarifolia, Behr.
baueri, Endl.
boroniæfolia, G. Don.
stenozyga, F.v.M.

Series III. Calyciflorae.

Leguminosæ, Juss.

Suborder I. PAPILIONACEÆ.

Isotropis wheeleri, F.v.M.
Pultenæa daphnoides, Wendl.
microphylla, Sieb.
pedunculata, Hook.
styphelioides, A. Cunn.
humilis, Benth.
foliolosa, A. Cunn.
densifolia, F.v.M.
prostrata, Benth.
Eutaxia empetrifolia, Schlecht.
Bossiæa riparia, A. Cunn.
ensata, Sieb.
walkeri, F.v.M.
Templetonia egena, Benth.
sulcata, Benth.
Hovea longifolia, R.Br.
Goodia lotifolia, Salisb.
Crotalaria cunninghamii, R.Br.
dissitiflora, Benth.
Medicago sativa, Linn.*
lupulina, Linn.*
denticulata, Willd.*
maculata, Willd.*
minima, Willd.*
tribuloides, Willd.*
intertexta, Willd.*
Melilotus parviflora, Desf.*
Trifolium repens, Linn.*
subterraneum, Linn.*
arvense, Linn.*
glomeratum, Linn.*
fragiferum, Willd.*

PAPILIONACEÆ.

Trifolium resupinatum, Linn.*
procumbens, Linn.*
Trigonella suavissima, Lindl.†
Lotus corniculatus, Linn.
australis, Andr.
Psoralea eriantha, Benth.
patens, Lindl.
cinerea, Lindl.
tenax, Lindl.
Indigofera enneaphylla, Linn.
trita, Linn. f.
australis, Willd.
brevidens, Benth.
Sesbania aculeata, Pers.
Clianthus dampieri, A. Cunn.†
Swainsona greyana, Lindl.
galegifolia, R.Br.†
phacoides, Benth.†
burkittii, F.v.M.
oligophylla, F.v.M.
procumbens, F.v.M.†
phacifolia, F.v.M.
oroboides, F.v.M.†
lessertiifolia, DC.
microphylla, A. Gray.
laxa, R.Br.
Glycyrrhiza psoraleoides, Benth.
Desmodium varians, Endl.
Vicia sativa, Linn.*
villosa, Linn.*
Hedysarum coronarium, Linn.*
Glycine falcata, Benth.
sericea, Benth.
tomentosa, Benth.
Galactia tenuiflora, Willd.

PAPILIONACEÆ.

Vigna lanceolata, Benth.
Rhynchosia minima, DC.
Onobrychis sativa, Lamarck.*

Suborder II. CÆSALPINIEÆ.

Cassia sophera, Linn., var. *schinifolia*.
pleurocarpa, F.v.M.
pruinosa, F.v.M.†
circinata, Benth.†
phyllodinea, R.Br.†
eremophila, A. Cunn.†
artemisioides, Gaud.†
sturtii, R.Br.†
desolata, F.v.M.
Petalostyles labicheoides, R.Br.
Bauhinia carronii, F.v.M.

Suborder III. MIMOSEÆ.

Neptunia gracilis, Benth.
Acacia continua, Benth.
spinescens, Benth.
lanigera, A. Cunn.
colletioides, A. Cunn.
tetragonophylla, F.v.M.
diffusa, Lindl.
rigens, A. Cunn.
juncifolia, Benth.
calamifolia, Sweet.
aspera, Lindl.
armata, R.Br.
obliqua, A. Cunn.
acinacea, Lindl.
lineata, A. Cunn.
undulifolia, A. Cunn.
flexifolia, A. Cunn.

MIMOSEÆ.

Acacia microcarpa, F.v.M.
montana, Benth.
verniciflua, A. Cunn.
sentis, F.v.M.†
pycnantha, Benth.
notabilis, F.v.M.
amœna, Wendl.
hakeoides, A. Cunn.
salicina, Lindl.
brachybotrya, Benth.
amblygona, A. Cunn.
trineura, F.v.M.
homalophylla, A. Cunn.†
pendula, A. Cunn.†
oswaldi, F.v.M.
stenophylla, A. Cunn.
sclerophylla, Lindl.
farinosa, Lindl.
viscidula, A. Cunn.
excelsa, Benth.
aneura, F.v.M.†
doratoxylon, A. Cunn.
spectabilis, A. Cunn.
decurrens, Willd.†
dealbata, Link.
farnesiana, Willd.

ROSACEÆ, Juss.

Rubus fruticosus, Linn.*
Rosa rubiginosa, Linn.*
Acœna ovina, A. Cunn.†
sanguisorbæ, Vahl.
Poterium sanguisorba, Linn.*

CRASSULACEÆ, De Cand.

Tillæa verticillaris, DC.

CRASSULACEÆ.

Tillæa purpurata, Hook.
recurva, Hook.

DROSERACEÆ, Salis.

Drosera indica, Linn.
glanduligera, Lehm.

HALORAGEÆ, R.Br.

Loudonia aurea, Lindl.
behrii, Schlecht.
Haloragis ceratophylla, Endl.
odontocarpa, F.v.M.
tetragyna, Hook.
Myriophyllum variæfolium, Hook.
verrucosum, Lindl.
integrifolium, Hook.
Ceratophyllum demersum, Linn.

MYRTACEÆ, Juss.

Calythrix tetragona, Labill.
Micromyrtus microphylla, Benth.
Bœckea crassifolia, Lindl.
behrii, F.v.M.
Leptospermum lævigatum, F.v.M.
flavescens, Sm.
lanigerum, Sm.
myrtifolium, Sieb.
Callistemon brachyandrus, Lindl.
Melaleuca acuminata, F.v.M.
uncinata, R.Br.
hakeoides, F.v.M.
pustulata, Hook.
Angophora intermedia, DC.
Eucalyptus obliqua, L'Hér.
leucoxylon, F.v.M.
melliodora, A. Cunn.
gracilis, F.v.M.

MYRTACEÆ.

Eucalyptus paniculata, Sm.
populifolia, Hook.
behriana, F.v.M.
pendula, A. Cunn.
uncinata, Turcz.
albens, Miq.
microtheca, F.v.M.
dumosa, A. Cunn.
incrassata, Labill.
dealbata, A. Cunn.
viminalis, Labill.
rostrata, Schlecht.
oleosa, F.v.M.
Syncarpia leptopetala, F.v.M.

LYTHRARIEÆ, Juss.

Ammannia multiflora, Roxb.
Lythrum salicaria, Linn.
hyssopifolium, Linn.

ONAGRARIEÆ, Juss.

Œnothera biennis, Linn.*
Epilobium junceum, Forst.
Jussiæa repens, Linn.

CUCURBITACEÆ, Juss.

Cucumis trigonus, Roxb.
myriocarpus, Naud.*
Melothria muelleri, Benth.

FICOIDEÆ, Dill.

Mesembryanthemum æquilaterale, Haw.
pomeridianum, Linn.*
Tetragonia expansa, Murr.†
Aizoon quadrifidum, F.v.M.
Trianthema decandra, Linn.
Mullugo glinus, A. Rich.

FICOIDEÆ.

Mullugo orygioides, F.v.M.
cerviana, Ser.

UMBELLIFERÆ, Juss.

Hydrocotyle hirta, R.Br.
callicarpa, Bunge.
trachycarpa, F.v.M.
Trachymene pilosa, Sm.
cyanopetala, Benth.
australis, Benth.
glaucifolia, Benth.
incisa, Rudge.
Xanthosia dissecta, Hook. f.
Eryngium rostratum, Cav.
Apium australe, Thou.
leptophyllum, F.v.M.
Daucus brachiatus, Sieb.†

Subclass II. MONOPETALÆ.

LORANTHACEÆ, Juss.

Loranthus longiflorus, Desr.
linearifolius, Hook.
exocarpi, Behr.
linophyllus, Fenzl.
pendulus, Sieb.
quandang, Lindl.
grandibracteus, F.v.M.

CAPRIFOLIACEÆ, Rich.

Sambucus xanthocarpa, F.v.M.
gaudichaudiana, DC.

RUBIACEÆ, Juss.

Hedyotis tillæacea, F.v.M.
Canthium latifolium, F.v.M
oleifolium, Hook.
Pomax umbellata, Soland.

RUBIACEÆ.

Asperula scoparia, Hook. f.
conferta, Hook. f.
Galium geminifolium, F.v.M.
gaudichaudi, DC.
aparine, Linn.

COMPOSITÆ, Vaill.

Leuzea australis, Gaud.
Centaurea solstitialis, Linn.†*
melitensis, Linn.*
calcitrapa, Linn.†*
Carthamus tinctorius, Linn.*
Onopordon acanthium, Linn.*
Carduus marianus, Linn.*
Arctium lappa, Linn.*
Cirsium lanceolatum, Scop.*
palustre, Scop.*
arvense, Scop.†*
Olearia myrsinoides, F.v.M.
viscidula, Benth.
lepidophylla, Benth.
subspicata, Benth.
pimeleoides, Benth.
conocephala, F.v.M.
magniflora, F.v.M.
muelleri, Benth.
decurrens, Benth.
teretifolia, F.v.M.
tenuifolia, Benth.
rudis, F.v.M.
ciliata, F.v.M.
Vittadinia australis, A. Rich.
Podocoma cuneifolia, R.Br.
Madia sativa, Mol.*
Erigeron linifolius, Willd.

COMPOSITÆ.

Minuria leptophylla, DC.
cunninghamii, Benth.
integerrima, Benth.
denticulata, Benth.
Calotis cuneifolia, R.Br.
cymbacantha, F.v.M.
erinacea, Steetz.
scabiosifolia, Sond.
scapigera, Hook.
lappulacea, Benth.
microcephala, Benth.
plumulifera, F.v.M.
hispidula, F.v.M.
Brachycome melanocarpa, Sond.
goniocarpa, Sond.
pachyptera, Turcz.
basaltica, F.v.M.
trachycarpa, F.v.M.
exilis, Sond.
ptychocarpa, F.v.M.
scapiformis, DC.
heterodonta, DC.
ciliaris, Less.
calocarpa, F.v.M.
Monenteles sphacelatus, Labill.
Pluchea eyrea, F.v.M.
Epaltes cunninghamii, Benth.
australis, Less.
Xanthium spinosum, Linn.*
Siegesbeckia orientalis, Linn.
Eclipta platyglossa, F.v.M.
Galinsoga parviflora, Cav.†*
Glossogyne tenuifolia, Cass.
Anthemis cotula, Linn.*
Chrysanthemum segetum, Linn.*

COMPOSITÆ.

Cotula australis, Hook. f.
Myriogyne minuta, Less.
Elachanthus pusillus, F.v.M.
Isoetopsis graminifolia, Turcz.
Myriocephalus rhizocephalus, Benth.
stuartii, Benth.
Angianthus tomentosus, Wendl.
brachypappus, F.v.M.
pusillus, Benth.
strictus, Benth.
Gnephosis skirrophora, Benth.
cyathopappa, Benth.
Calocephalus sonderi, F.v.M.
citreus, Less.
platycephalus, Benth.
Gnaphalodes uliginosum, A. Gray.
Craspedia richea, Cass.
pleiocephala, F.v.M.
chrysantha, Benth.
globosa, Benth.
Chthonocephalus pseudoevax, Steetz.
Cassinia lævis, R.Br.
quinquefaria, R.Br.
arcuata, R.Br.
Eriochlamys behrii, Sond. et Muell.
Rutidosis helichrysoides, DC.
Millotia tenuifolia, Cass.
greevesii, F.v.M.
Ixiolæna leptolepis, Benth.
tomentosa, Sond. et Muell.
Athrixia tenella, Benth.
Podolepis rutidochlamys, F.v.M.
acuminata, R.Br.
canescens, A. Cunn.
rugata, Labill.

COMPOSITÆ.

Podolepis lessoni, Benth.
siemssenia, F.v.M.
Leptorhynchus panætioides, Benth.
ambiguus, Benth.
pulchellus, F.v.M.
waitzia, Sond.
Helichrysum semifertile, F.v.M.
bracteatum, Willd.
podolepideum, F.v.M.
apiculatum, DC.
semipapposum, DC.
dockerii, F.v.M.
diosmifolium, Less.
adnatum, Benth.
cunninghamii, Benth.
Waitzia corymbosa, Wendl.
Helipterum polygalifolium, DC.
floribundum, DC.
incanum, DC.
cotula, DC.
hyalospermum, F.v.M.
strictum, Benth.
corymbiflorum, Schlecht.
pygmæum, Benth.
moschatum, Benth.
dimorpholepis, Benth.
Gnaphalium luteo-album, Linn.
japonicum, Thunb.
indicum, Linn.
Erechthites quadridentata, DC.
hispidula, DC.
Senecio gregorii, F.v.M.
magnificus, F.v.M.
lautus, Forst.
behrianus, Sond. et Muell.

COMPOSITÆ.

Senecio brachyglossus, F.v.M.
cunninghamii, DC.
vulgaris, Linn.*
Cryptostemma calendulaceum, R.Br.†*
Calendula arvensis, Linn.*
Microseris forsteri, Hook. f.
Hypochœris glabra, Linn.
radiata, Linn.*
Picris hieracioides, Linn.
Sonchus oleraceus, Linn.
Cichorium intybus, Linn.*
Tragopogon porrifolius, Linn.†*
Lactuca saligna, Linn.*
Taraxacum dens-leonis, Desf.*

STYLIDIEÆ, R.Br.

Stylidium graminifolium, Swartz.

GOODENOVIEÆ, R.Br.

Velleia connata, F.v.M.
paradoxa, R.Br.
Goodenia geniculata, R.Br.
hederacea, Sm.
calcarata, F.v.M.
cycloptera, R.Br.
pinnatifida, Schlecht.
heteromera, F.v.M.
glauca, F.v.M.
gracilis, R.Br.
Scævola spinescens, R.Br.
ovalifolia, R.Br.
æmula, R.Br.
Dampiera lanceolata, A. Cunn.
marifolia, Benth.
rosmarinifolia, Schlecht.

CAMPANULACEÆ, Juss.

Pratia erecta, Gaud.

CAMPANULACEÆ.

Isotoma axillaris, Lindl.
petræa, F.v.M.
fluviatilis, F.v.M.
Wahlenbergia gracilis, DC.

EPACRIDEÆ, R.Br.

Styphelia adscendens, R.Br.
Melichrus urceolatus, R.Br.
Brachyloma ericoides, Sond.
Leucopogon attenuatus, A. Cunn.
ericoides, R.Br.
cordifolius, Lindl.

PRIMULACEÆ, Vent.

Anagallis arvensis, Linn.*

JASMINEÆ, Juss.

Jasminum lineare, R.Br.†

APOCYNEÆ, Juss.

Alstonia constricta, F.v.M.
Parsonsia lanceolata, R.Br.
Lyonsia eucalyptifolia, F.v.M.

ASCLEPIADEÆ, R.Br.

Sarcostemma australe, R.Br.†
Pentatropis quinquepartita, Benth.
Marsdenia leichhardtiana, F.v.M.†

LOGANIACEÆ, R.Br.

Logania linifolia, Schlecht.
nuda, F.v.M.

GENTIANEÆ, Juss.

Sebæa ovata, R.Br.
Erythræa australis, R.Br.†

HYDROPHYLLACEÆ, Von Martius.

Phacelia tanacetifolia, Benth.*

BORAGINEÆ, Juss.

Heliotropium curassavicum, Linn.

BORAGINEÆ.

Heliotropium europœum, Linn.
ovalifolium, Forsk.
Halgania strigosa, Schlecht.
lavandulacea, Endl.
Trichodesma zeylanicum, R.Br.
Echium violaceum, Linn.*
Lithospermum arvense, Linn.*
Echinospermum concavum, F.v.M.
Rochelia maccoya, F.v.M.
Cynoglossum suaveolens, R.Br.

CONVOLVULACEÆ, Juss.

Ipomœa sepiaria, Koen.
Convolvulus erubescens, Sims.
Polymeria longifolia, Lindl.
Breweria media, R.Br.
Cressa cretica, Linn.
Evolvulus alsinoides, Linn.
Wilsonia rotundifolia, Hook.
backhousii, Hook. f.
Cuscuta australis, R.Br.

SOLANEÆ, Juss.

Solanum nigrum, Linn.†
simile, F.v.M.
ferocissimum, Lindl.
esuriale, Lindl.
chenopodinum, F.v.M.
sturtianum, F.v.M.
sodomœum, Linn.*
lacunarium, F.v.M.
ellipticum, R.Br.
Lycium australe, F.v.M.
Datura stramonium, Linn.†*
tatula, Linn.*
Nicotiana suaveolens, Lehm.
glauca, Grah.†*

SCROPHULARINEÆ, Mirb.
Duboisia hopwoodii, F.v.M.
Verbascum virgatum, With.*
Celsia cretica, Linn.*
Linaria elatine, Mill.*
Mimulus gracilis, R.Br.
repens, R.Br.
prostratus, Benth.
Morgania floribunda, Benth.
glabra, R.Br.
Gratiola pedunculata, R.Br.
peruviana, Linn.
Peplidium humifusum, Delile.
Glossostigma elatinoides, Benth.
Veronica perfoliata, R.Br.
arenaria, A. Cunn.
peregrina, Linn.
Euphrasia collina, R.Br.
scabra, R.Br.
Bartsia viscosa, Linn.†*

OROBANCHACEÆ, Lindl.
Orobanche cernua, Lœfl.

BIGNONIACEÆ, R.Br.
Tecoma australis, R.Br.

ACANTHACEÆ, R.Br.
Ruellia australis, R.Br.
Justicia procumbens, Linn.

MYOPORINEÆ, R.Br.
Myoporum acuminatum, R.Br.
serratum, R.Br.
deserti, A. Cunn.†
parvifolium, R.Br.
platycarpum, R.Br.
Pholidia scoparia, R.Br.
divaricata, F.v.M.

MYOPORINEÆ.

Eremophila bowmanni, F.v.M.
oppositifolia, R.Br.†
sturtii, R.Br.
mitchelli, Benth.
latrobei, F.v.M.
longifolia, F.v.M.†
polyclada, F.v.M.
bignoniæflora, F.v.M.†
goodwinii, F.v.M.
brownii, F.v.M.
duttoni, F.v.M.
maculata, F.v.M.†
latifolia, F.v.M.
alternifolia, R.Br.

VERBENACEÆ, Juss.

Verbena officinalis, Linn.
bonariensis, Linn.*

LABIATÆ, Juss.

Origanum vulgare, Linn.*
Melissa officinalis, Linn.*
Nepeta cataria, Linn.*
Marrubium vulgare, Linn.*
Stachys arvensis, Linn.†*
Moluccella lævis, Linn.*
Mentha australis, R.Br.
satureioides, R.Br.
Salvia verbenacea, Linn,*
pratensis, Linn.*
Prostanthera ovalifolia, R.Br.
nivea, A. Cunn.
striatiflora, F.v.M.
microphylla, A. Cunn.
aspalathoides, A. Cunn.
Westringia rigida, R.Br.
eremicola, A. Cunn.

LABIATÆ.

Teucrium racemosum, R.Br.
sessiliflorum, Benth.
Ajuga australis, R.Br.

PLANTAGINEÆ, Juss.

Plantago varia, R.Br.†
lanceolata, Linn.*
major, Linn.*

Subclass III. MONOCHLAMYDEÆ.

PHYTOLACCACEÆ, Endl.

Gyrostemon cyclotheca, Benth.
Codonocarpus cotinifolius, F.v.M.†

CHENOPODIACEÆ, Meisn.

Rhagodia parabolica, R.Br.†
gaudichaudiana, Moq.
crassifolia, R.Br.
spinescens, R.Br.
hastata, R.Br.†
nutans, R.Br.†
linifolia, R.Br.
Chenopodium nitrariaceum, F.v.M.†
auricomum, Lindl.†
album, Linn.*
microphyllum, F.v.M.
carinatum, R.Br.†
cristatum, F.v.M.
atriplicinum, F.v.M.†
Atriplex stipitata, Benth.†
quinnii, F.v.M.
nummularia, Lindl.†
rhagodioides, F.v.M.†
vesicaria, Hew.†
velutinella, F.v.M.†
angulata, Benth.†
semibaccata, R.Br.†

CHENOPODIACEÆ.

Atriplex muelleri, Benth.†
microcarpa, Benth.
campanulata, Benth.†
leptocarpa, F.v.M.†
limbata, Benth.†
halimoides, Lindl.†
holocarpa, F.v.M.†
spongiosa, F.v.M.
Enchylæna microphylla, Moq.
tomentosa, R.Br.†
Kochia lobiflora, F.v.M.
lanosa, Lindl.†
triptera, Benth.
brevifolia, R.Br.†
pyramidata, Benth.†
eriantha, F.v.M.†
villosa, Lindl.†
planifolia, F.v.M.†
sedifolia, F.v.M.†
appressa, Benth.†
aphylla, R.Br.†
ciliata, F.v.M.†
brachyptera, F.v.M.†
stelligera, F.v.M.†
Chenolea dallachyana, Benth.†
tricornis, Benth.
sclerolænoides, F.v.M.
Babbagia dipterocarpa, F.v.M.
Sclerolæna diacantha, Benth.†
lanicuspis, F.v.M.
bicornis, Lindl.
biflora, R.Br.
paradoxa, R.Br.†
Threlkeldia salsuginosa, F.v.M.
Anisacantha muricata, Moq.

CHENOPODIACEÆ.

Anisacantha divaricata, R.Br.
echinopsila, F.v.M.
Salicornia robusta, F.v.M.
tenuis, Benth.
Salsola kali, Linn.

AMARANTACEÆ, Juss.

Amarantus mitchellii, Benth.
macrocarpus, Benth.
tenuis, Benth.
enervis, F.v.M.
Trichinium obovatum, Gaud.†
parviflorum, Lindl.
alopecuroideum, Lindl.
nobile, Lindl.†
macrocephalum, R.Br.
exaltatum, Benth.
erubescens, Moq.†
spathulatum, R.Br.
Alternanthera nodiflora, R.Br.

POLYGONACEÆ, Juss.

Rumex brownii, Campd.
dumosus, A. Cunn.
halophilus, F.v.M.
acetosella, Linn.*
Polygonum aviculare, Linn.*
plebeium, R.Br.
prostratum, R.Br.
minus, Huds.
lapathifolium, Linn.
attenuatum, R.Br.
Muhlenbeckia polygonoides, F.v.M.
cunninghamii, F.v.M.

NYCTAGINEÆ, Juss.

Boerhaavia diffusa, Lindl.†

PROTEACEÆ, Juss.

Isopogon petiolaris, A. Cunn.
Conospermum patens, Schlecht.
Persoonia sericea, A. Cunn.
fastigiata, R.Br.
rigida, R.Br.
juniperina, Labill.
Grevillea pterosperma, F.v.M.
arenaria, R.Br.
lanigera, A. Cunn.
ericifolia, R.Br.
divaricata, R.Br.
lavandulacea, Schlecht.
huegellii, Meisn.
striata, R.Br.
triternata, R.Br.
Hakea purpurea, Hook.
leucoptera, R.Br.†
flexilis, F.v.M.
Banksia ornata, F.v.M.

THYMELEÆ, Juss.

Pimelea glauca, R.Br.
colorans, A. Cunn.
collina, R.Br.
sericostachya, F.v.M.
trichostachya, Lindl.
microcephala, R.Br.
pauciflora, R Br.
serpyllifolia, R.Br.
flava, R.Br.
curviflora, R.Br., et var. *micrantha*.
octophylla, R.Br.

EUPHORBIACEÆ, Juss.

Euphorbia australis, Boiss.
drummondii, Boiss.
eremophila, A. Cunn.

EUPHORBIACEÆ.

Beyeria viscosa, Miq.
opaca, F.v.M.
Ricinocarpus bowmanni, F.v.M.
Bertya cunninghamii, Planch.
mitchelli, Muell.
Phyllanthus thesioides, Benth.
ramosissimus, Muell.
fuernrohrii, F.v.M.
lacunarius, F v.M.
Adriana acerifolia, Hook.
hookeri, Muell.
Ricinus communis, Willd.†*

URTICEÆ, Vent.

Urtica incisa, Poir.
urens, Linn.*

CASUARINEÆ, Mirb.

Casuarina stricta, Ait.
glauca, Sieb.†
cunninghamiana, Miq.
distyla, Vent.

SANTALACEÆ, R.Br.

Santalum lanceolatum, R.Br., var. *angustifolium*.
Fusanus acuminatus, R.Br.†
persicarius, F.v.M.
Choretrum glomeratum, R.Br.
spicatum, F.v.M.
lateriflorum, R.Br.
Leptomeria aphylla, R.Br.
Exocarpus spartea, R.Br.
aphylla, R.Br.
stricta, R.Br.

Subclass IV. GYMNOSPERMÆ.

CONIFERÆ, Juss.

Frenela robusta, A. Cunn.
endlicheri, Parlat.

Class II. MONOCOTYLEDONS, Ray.

HYDROCHARIDEÆ, Lam.

Ottelia ovalifolia, L. C. Rich.
Vallisneria spiralis, Linn.
Hydrilla verticillata, Casp.

ORCHIDEÆ, R.Br.

Cymbidium canaliculatum, R.Br.
Spiranthes australis, Lindl.
Thelymitra ixioides, Sw.
longifolia, Forst.
antennifera, Hook. f.
Diuris punctata, Sm.
palustris, Lindl.
maculata, Sm.
pedunculata, R.Br.
sulphurea, R.Br.
Prasophyllum patens, R.Br.
fuscum, R.Br.
Microtis porrifolia, Spreng.
Corysanthes fimbriata, R.Br.
Pterostylis nutans, R.Br.
barbata, Lindl.
mutica, R.Br.
rufa, R.Br.
Eriochilus autumnalis, R.Br.
Caladenia filamentosa, R.Br.
patersoni, R.Br., var. *typica*.
clavigera, A. Cunn.
carnea, R.Br.
congesta, R.Br.
cærulea, R.Br.
deformis, R.Br.
Glossodia major, R.Br.

IRIDEÆ, R.Br.

Sisyrinchium bermudiana, Linn.*

IRIDEÆ.

Sisyrinchium micranthum, Cav.*
Homeria collina, Sweet.*
aurantiaca, Sweet.*

AMARYLLIDEÆ, St. Hil.

Hypoxis hygrometrica, Labill.
Crinum flaccidum, Herb.
Calostemma purpureum, R.Br.
luteum, Sims.

LILIACEÆ, De Cand.

Anguillaria dioica, R.Br.
Bulbine bulbosa, Haw.
semibarbata, Haw.
Thysanotus tuberosus, R.Br.
baueri, R.Br.
Cæsia vittata, R.Br.
Corynotheca lateriflora, F.v.M.
Tricoryne elatior, R.Br.
Stypandra glauca, R.Br.
cæspitosa, R.Br.
Allium fragrans, Vent.*

PHILYDRACEÆ, R.Br.

Philydrum lanuginosum, Banks.

COMMELYNACEÆ, Endl.

Commelyna ensifolia, R.Br.

JUNCACEÆ, Agardh.

Xerotes longifolia, R.Br.
effusa, Lindl.
elongata, Benth.
leucocephala, R.Br.
Luzula campestris, DC.
Juncus planifolius, R.Br.
bufonius, Linn.
homalocaulis, F.v.M.

JUNCACEÆ.

Juncus communis, E. Mey.
pauciflorus, R.Br.

TYPHACEÆ, De Cand.

Typha angustifolia, Linn.

LEMNACEÆ, De Cand.

Lemna trisulca, Linn.
minor, Linn.
oligorrhiza, Kurz.

NAIADEÆ, Agardh.

Triglochin centrocarpa, Hook.
procera, R.Br.
Potamogeton natans, Linn.
crispus, Linn.
obtusifolius, Mert. et Koch.
acutifolius, Link.
Naias tenuifolia, R.Br.

ALISMACEÆ, R.Br.

Alisma plantago, Linn.
Damasonium australe, Salisb.

RESTIACEÆ, R.Br.

Hypolæna lateriflora, Benth.

CYPERACEÆ, R.Br.

Cyperus pygmæus, Rottb.
gracilis, R.Br.
squarrosus, Linn.
difformis, Linn.
concinnus, R.Br.
vaginatus, R.Br.
gilesii, Benth.
fulvus, R.Br.
iria, Linn.
diphyllus, Retz.
rotundus, Linn.†
subulatus, R.Br.

CYPERACEÆ.

Cyperus gunnii, Hook. f.
exaltatus, Retz.
Heleocharis acuta, R.Br.
Fimbristylis velata, R.Br.
æstivalis, Vahl.
neilsoni, F.v.M.
barbata, Benth.
Scirpus riparius, Spreng.
cartilagineus, Spreng.
Carex inversa, R.Br.
chlorantha, R.Br.
paniculata, Linn.
vulgaris, Fries, var. *gaudichaudiana*.
gunniana, Boott.
pseudocyperus, Linn.

GRAMINEÆ, R.Br.

Paspalum distichum, Linn.†
Eriochloa punctata, Hamilt.†
annulata, Kunth.†
Panicum cœnicolum, F.v.M.†
divaricatissimum, R.Br., et vars.†
macractinium, Benth.†
sanguinale, Linn.†
leucophœum, H.B. et K.†
flavidum, Retz., et var.†
gracile, R.Br.†
helopus, Trin.
gilesii, Benth.
distachyum, Linn.†
reversum, F.v.M.
colonum, Linn.
crus-galli, Linn.†
adspersum, Trin.
miliaceum, Linn.*
repens, Linn.

GRAMINEÆ.

Panicum effusum, R.Br., et var.†
mitchelli, Benth.
decompositum, R.Br.†
trachyrhachis, Benth.
prolutum, F.v.M.†
Setaria glauca, Beauv.†
verticillata, Beauv.*
viridis, Beauv.*
Plagiosetum refractum, Benth.
Chamæraphis spinescens, Poir.
Spinifex paradoxus, Benth.
Lappago racemosa, Willd.
Neurachne alopecuroides, R.Br.
mitchelliana, Nees.†
munroi, F.v.M.
Perotis rara, R.Br.
Hemarthria compressa, R.Br.†
Pollinia fulva, Benth.†
Andropogon erianthoides, F.v.M.†
sericeus, R.Br.†
pertusus, Willd.†
bombycinus, R.Br.†
refractus, R.Br.†
Imperata arundinacea, Cyr.†
Chrysopogon gryllus, Trin.
parviflorus, Benth.
Sorghum halepense, Pers.
Anthistiria ciliata, Linn.†
avenacea, F.v.M.†
membranacea, Lindl.†
Polypogon monspeliensis, Desf.*
Ehrharta longiflora, Sm.*
Alopecurus geniculatus, Linn.†
Phalaris canariensis, Linn.*
Aristida stipoides, R.Br.

GRAMINEÆ.

Aristida arenaria, Gaud.
behriana, F.v.M.
leptopoda, Benth.
ramosa, R.Br.
calycina, R.Br.
Stipa elegantissima, Labill.
tuckeri, F.v.M.
setacea, R.Br.
aristiglumis, F.v.M.
scabra, Lindl.
Dichelachne crinita, Hook. f.†
sciurea, Hook. f.†
Deyeuxia forsteri, Kunth.†
quadriseta, Benth.†
scabra, Benth.
Aira caryophyllea, Linn.
præcox, Linn.*
Holcus lanatus, Linn.*
Avena fatua, Linn.*
Amphibromus neesii, Steud.†
Danthonia bipartita, F.v.M.†
pallida, R.Br.†
pilosa, R.Br.
semiannularis, R.Br.†
Amphipogon strictus, R.Br.†
Pappophorum nigricans, R.Br.†
avenaceum, Lindl.†
Astrebla pectinata, F.v.M.†
triticoides, F.v.M., var. *lappacea*.†
elymoides, F.v.M.†
Triraphis mollis, R.Br., et var. *humilis*.†
Triodia pungens, R.Br.
irritans, R.Br.
Cynodon dactylon, Pers.†
Chloris acicularis, Lindl.†

GRAMINEÆ.

Chloris truncata, R.Br.,† et var.
ventricosa, R.Br., et var.
Eleusine ægyptiaca, Pers.†
Leptochloa subdigitata, Trin.
Diplachne loliiformis, F.v.M.
fusca, Beauv.†
Sporobolus virginicus, Kunth, var. *pallida*.†
indicus, R.Br.†
pulchellus, R.Br.
lindleyi, Benth.†
actinocladus, F.v.M.
Eriachne aristidea, F.v.M.
obtusa, R.Br.†
Ectrosia leporina, R.Br.
Lamarckia aurea, Mœnch.*
Phragmites communis, Trin.
Elytrophorus articulatus, Beauv.
Kœleria cristata, Pers.*
phleoides, Pers.*
Dactylis glomerata, Linn.*
Eragrostis tenella, Beauv.
pilosa, Beauv.†
kennedyæ, Tur.
brownii, Nees.
laniflora, Benth.
eriopoda, Benth.
chætophylla, Steud.
lacunaria, F.v.M.†
falcata, Gaud.
Poa cæspitosa, Forst.,† et vars.
nodosa, Nees.
annua, Linn.*
lepida, F.v.M.
Glyceria fordeana, F.v.M.†
ramigera, F.v.M.†

GRAMINEÆ.

Briza minor, Linn.*
maxima, Linn.*
Bromus mollis, Linn.*
arenarius, Labill., var. *macrostachya.*†
sterilis, Linn.*
Ceratochloa unioloides, DC.*
Festuca bromoides, Linn.
duriuscula, Linn.
Agropyrum scabrum, Beauv.
Lolium perenne, Linn.*
temulentum, Linn.*
Lepturus cylindricus, Trin.
Hordeum murinum, Linn.*
nodosum, Linn.*

Class III. ACOTYLEDONS, Juss.

LYCOPODIACEÆ, Swartz.

Azolla pinnata, R.Br.
rubra, R.Br.

MARSILEACEÆ, R.Br.

Marsilea drummondii, A.Br.†

FILICES, Linn.

Ophioglossum vulgatum, Linn.
Lindsœa linearis, Swartz.
Cheilanthes tenuifolia, Swartz.
Pteris aquilina, Linn., var. *esculenta.*
Notholœna vellea, R.Br.
distans, R.Br.
Grammitis rutæfolia, R.Br.